Trace Analytical Laboratories, Inc.

Studied zooplankton size and population distributions in Lake Michigan.

EDUCATION

- B.S., Resource Ecology & Management, The University of Michigan
- . M.S., Zoology, Michigan State University



phone fax

231.773.5998 toll free 800.733.5998 131.773.6537

Trace Analytical Laboratories, Inc. 2241 Black Creek Road Muskegon, MI 49444-2673 info@rrace-labs.com www.trace-labs.com

Statement of Qualifications





OVERVIEW

TRACE Analytical Laboratories, Inc. was founded in 1989 by Dr. William Schroeder, a veteran of service in the U.S. Navy that holds a doctorate in chemistry. TRACE is a full service Veteran Owned Small Business environmental laboratory, providing a complete range of environmental analyses and sampling services for our clients. These services include organic and inorganic analyses of water, soil, air, and hazardous waste. All of our routine services conform to strict methodologies from sources such as the US EPA, ASTM, AOAC, NIOSH, and Standard Methods.

TRACE has state-of-the-art analytical instrumentation using proven technology. Part of the Quality Assurance program is obtaining, maintaining, and calibrating equipment and instrumentation that is required to accurately and efficiently carry out analysis of samples as prescribed in analytical test methods. TRACE purchases or prepares appropriate reagents and standards for analyses. Whenever possible these reagents and standards will be ACS grade, spectroquality, or traceable to NIST standards. TRACE collects and receives samples under strict chain-of-custody procedures and adheres to proper sample collection and preservation techniques. The ability to define and defend the analytical process is one of TRACE'S primary Quality Assurance program objectives.

TRACE has substantial experience with servicing the analytical needs of a diverse client base. TRACE is accredited in accordance with the National Environmental Laboratory Accreditation Program (NELAP), the Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), and ISO/IEC 17025:2005. This gives TRACE the ability to provide analytical services to residential, industrial, engineering, and consulting clients, as well as local, state, and federal agencies, including the Department of Defense. TRACE is a Contract Laboratory for the Michigan Department of Natural Resources and Environment, and is Drinking Water Certified by the State of Michigan. Our laboratory continually supports regulatory programs such as CERCLA/SARA, RCRA, Clean Air Act, Safe Drinking Water Act, NPDES and the Clean Water Act.

TRACE's Client Services/Project Management Department works closely with clients and laboratory personnel to ensure all details and project specifications are accurately performed. The Client Services/Project Management Department can assist in project planning, including the preparation of Quality Assurance Project Plans (QAPPs). Working with clients at the onset of a project assures the results are more conclusive and cost-effective.

Personnel:

TRACE Analytical Laboratories, Inc., is comprised of experienced professionals with degrees in chemistry, biology, and environmental science. Our team has specialized training in laboratory operations and experience in the industrial workplace. Their expertise guarantees our clients the range and depth of scientific disciplines, technical specialties, practical experience, and analytical services needed to meet the objectives of today's complex industrial and environmental demands.

Appendix VII
List of methods under which Trace performs NELAC accredited analyses

Analyte/Analyte Group	Matrix	Analytical Method(s)
pH	Aqueous	SM 4500 H* B, SW 846 9040B, SW 846 9045C
Temperature	Aqueous	EPA 170.1
Turbidity	Aqueous	EPA 180.1
Non-Filterable Residue (TSS)	Aqueous	SM 2540 D
Total Dissolved Solids (TDS)	Aqueous	SM 2540 C
Residue (Total)	Aqueous	SM 2540 B
Calcium Hardness as CaCO ₃	Aqueous	SM 2340 B
Total Hardness as CaCO₃	Aqueous	SM 2340 B
BOD/CBOD	Aqueous	SM 5210 B
COD	Aqueous	EPA 410.4
TOC	Aqueous/Solid	SM 5310 C / Walkley-Black
Ammonia as N	Aqueous	EPA 350.1
lons by Ion Chromatography	Aqueous/Solid	EPA 300.0, SW 846 9056
Sulfides	Aqueous/Solid	SW 846 9030B, SM 4500 S2 F & D
Ortho-phosphate as P	Aqueous	EPA 365.1
Total Kjeldahl Nitrogen	Aqueous	EPA 351.2
Total phosphorous	Aqueous	SW 846 6010B, EPA 365.2
Cyanide, total	Aqueous	EPA 335.4, EPA 9012A
Phenolics, total	Aqueous	EPA 420.2, SW 846 9065
Grease & Oil	Aqueous	EPA 1664
Alkalinity as CaCO ₃	Aqueous	SM 2320 B
Conductivity	Aqueous	EPA 120.1
Total Residual Chlorine	Aqueous	SM 4500 CF G
Ignitibility	Aqueous/Waste	SW 846 1010
Metals	Aqueous/Solid	SW 846 6010B, EPA 200.7
Metals	Aqueous/Solid	SW 846 6020, EPA 200.8
Mercury	Aqueous/Solid	SW 846 7470A/7471A
Low-Level Mercury	Aqueous	EPA 1631
Calcium, Magnesium, Potassium, Sodium	Aqueous/Solid	SW 846 6010B, EPA 200.7
Potassium, Sodium	Aqueous	SW 846 6020, EPA 200.8
Hexavalent Chromium	Aqueous/Solid	SM 3500 Cr B, SW 846 7196
Volatiles	Aqueous/Solid	SW 846 8260B, EPA 624
PCBs	Aqueous/Solid/Oil	SW 846 8082
Pesticides	Aqueous/Solid	SW 846 8081A
Herbicides	Aqueous	SW 846 8151A
Semi-Volatiles (BNAs)	Aqueous/Solid	SW 846 8270C, EPA 625
Explosives Residue	Aqueous/Solid	SW 846 8330B
Polynuclear Aromatic	Aqueous/Sold	SW 846 8310
Hydrocarbons		
TCLP	Aqueous/Solid/Waste	SW 846 1311
SPLP	Aqueous/Solid/Waste	SW 846 1312

DOC-6.18 Date Effective: 5/28/14

APPENDIX

E EPA PLUGGING AND
ABANDONMENT PLAN
- EPA FORM 7540-14
(SEE ATTACHMENT Q)



September 5, 2017

Mr. Grant McHardy Buckeye Partners, LP One Greenway Plaza, Suite 600 Houston, TX 77046

Re:

Plugging and Abandonment Costs

Proposed Class I Injection Wells BDW 1 through 5

Dear Mr. McHardy:

As required, WSP has completed an estimate for the plugging and abandonment procedures and associated costs for the closure of Buckeye Partners, LP Woodhaven Terminal Wells BDW 1 through 5. Field Plugging procedures provided with this application were used as a basis for this estimate. This estimate reflects current rates applicable to the Midwest for oilfield services including workover rigs, oilfied supplies and cementing equipment. A summary of the major cost elements is provided below. Complete cost estimates are provided as attachments.

Total	\$557,725
BDW-5	\$112,645
BDW-4	\$109,895
BDW-3	\$112,645
BDW-2	\$112,645
BDW-1	\$109,895
WELL NO.	P&A ESTIMATE

Kind regards,

Brandon Schulte Mgr. Permitting & Well Integrity

Enclosures

WSP USA Suite 200 16200 Park Row Houston, TX 77084



BUDGET COST ESTIMATE

	Buckeye Parterns, LP P&A Cost Estimate Per Well (Wells 1 & 4)		
Date			
	192065A	-	
	: Brandon Schulte		
Reviewed By			Rev. 0
04 88 80	AGEMENT COST	-	
	LABOR - OFFICE		\$6,260
	LABOR - FIELD		\$4,800
	EXPENSES		\$2,200
	MISCELLANEOUS		\$0
	SPECIAL LABOR & SERVICES		\$0
7 X	SPECIAL EXPENSES		\$0
	SUBTOTAL - 01 MANAGEMENT COST		\$13,260
02 SER	VICES AND RENTALS		4 9
01	LOCATION		\$0
02	RIG MOBILIZATION/DEMOBILIZATION		\$0
03	DRILLING RIG		\$0
04	FUEL	L.	\$0
	DRILLING WATER		\$0
	DRILLING FLUIDS & SOLIDS CONTROL		\$0
	BITS, HOLE OPENERS, AND UNDERREAMERS		\$0
	RENTAL TOOLS, FISHING TOOLS AND SERVICES		\$10,600
	DIRECTIONAL DRILLING		\$0
	CEMENT, CEMENT SERVICES, HARDWARE	F	\$22,500
	LOGGING, PERFORATING & WIRELINE SERVICES		\$0
	CORING & CORE ANALYSIS		\$0
	WORKOVER RIG		\$25,000
	MUDLOGGING, RESERVOIR TESTING & ANALYSIS, ETC.		\$0
	STIMULATION, NITROGEN, PUMP TRUCKS		\$0
	CASING CREWS & TOOLS, EXT. TESTERS, SPEAR SERVICES		\$5,500
The second second	WELDING	8	\$1,250
	TESTING, INSPECTION, & REPAIR SERVICES		\$0
	TRANSPORTATION		\$5,000
	HAULING, VACUUM TRUCKS & DISPOSAL MISCELLANEOUS MATERIALS & SUPPLIES		\$0 \$0
	MISCELLANEOUS MATERIALS & SUPPLIES MISCELLANEOUS SERVICES & EQUIPMENT		\$10,500
	SITE COMMUNICATIONS		\$10,300
	HEALTH, SAFETY & ENVIRONMENTAL		\$0
	CONSULTANTS AND SPECIAL SERVICES		\$0
25	SUBTOTAL - 02 SUBCONTRACTS, SERVICES, RENTALS		\$80,350
03 MAT	ERIALS		
	CASING		\$0
	WELLHEAD EQUIPMENT		\$0
	COMPLETION EQUIPMENT		\$7,500
	SUBTOTAL - 03 MATERIALS		\$7,500
04 TAX	ES	ii	
DECORATE TAXABLE	SALES TAX - LOCAL & STATE - INCLUDED IN LINE ITEMS		
02	CONTRACTOR'S TAX	0%	\$0
	SUBTOTAL - 04 TAXES		\$0
05 PRC	JECT CONTINGENCIES		
01	SERVICES	0%	\$0
02	MATERIALS	0%	\$0
	SUBTOTAL - 05 PROJECT CONTINGENCIES		\$0
	DJECT MANAGEMENT FEES		
01	- N (10) N (10) N (10) (10)	10%	\$8,035
02	MATERIALS	10%	\$750
1	SUBTOTAL - 06 PROJECT MANAGEMENT FEES		\$8,785
	TOTAL COST ESTIMAT		\$109,895



BUDGET COST ESTIMATE

		Buckeye Parterns, LP P&A Cost Estimate Per Well (Wells 2, 3, & 5)	
	•		Date:
			Project No.:
	4		Estimate By:
Rev. 0	,		Reviewed By:
	47	CERETAIT COCT	04 844 84
\$6,260		LABOR - OFFICE	
\$4,800		LABOR - FIELD	
\$2,200		EXPENSES	
\$(MISCELLANEOUS	
\$(SPECIAL LABOR & SERVICES	05
\$0		SPECIAL EXPENSES	
\$13,260		SUBTOTAL - 01 MANAGEMENT COST	
		ICES AND RENTALS	02 SER
\$0		LOCATION	
\$0		RIG MOBILIZATION/DEMOBILIZATION	
\$0		DRILLING RIG	
\$0		FUEL	
\$0		DRILLING WATER	1000
\$0		DRILLING FLUIDS & SOLIDS CONTROL	
\$(BITS, HOLE OPENERS, AND UNDERREAMERS	
\$10,600		RENTAL TOOLS, FISHING TOOLS AND SERVICES	1000000
\$1		DIRECTIONAL DRILLING	
\$25,000		CEMENT, CEMENT SERVICES, HARDWARE	
\$(LOGGING, PERFORATING & WIRELINE SERVICES	
\$1		CORING & CORE ANALYSIS	
\$25,000		WORKOVER RIG	
SI	<u> </u>	MUDLOGGING, RESERVOIR TESTING & ANALYSIS, ETC.	
\$6		STIMULATION, NITROGEN, PUMP TRUCKS CASING CREWS & TOOLS, EXT. TESTERS, SPEAR SERVICES	
\$5,500 \$1,250		WELDING	
φ1,25t		TESTING, INSPECTION, & REPAIR SERVICES	
\$5,000		TRANSPORTATION	
\$5,000		HAULING, VACUUM TRUCKS & DISPOSAL	
Si	77	MISCELLANEOUS MATERIALS & SUPPLIES	
\$10,50		MISCELLANEOUS SERVICES & EQUIPMENT	
\$10,30		SITE COMMUNICATIONS	
\$(HEALTH, SAFETY & ENVIRONMENTAL	
S		CONSULTANTS AND SPECIAL SERVICES	
\$82,85		SUBTOTAL - 02 SUBCONTRACTS, SERVICES, RENTALS	
		RIALS	03 MAT
\$1		CASING	
\$1		WELLHEAD EQUIPMENT	02
\$7,50		COMPLETION EQUIPMENT	03
\$7,50		SUBTOTAL - 03 MATERIALS	
		S	04 TAXE
		SALES TAX - LOCAL & STATE - INCLUDED IN LINE ITEMS	01
\$1	0%	CONTRACTOR'S TAX	02
\$1		SUBTOTAL - 04 TAXES	_
	00/	ECT CONTINGENCIES	
\$1	0%	SERVICES	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
\$1	0%	MATERIALS SUBTOTAL - 05 PROJECT CONTINGENCIES	02
ф			00 000
\$8,28	10%	ECT MANAGEMENT FEES SERVICES	
\$75	10%	MATERIALS	
\$9,03	10 /0	SUBTOTAL - 06 PROJECT MANAGEMENT FEES	_ 02
φυ,υο:		TOTAL - 06 PROJECT MANAGEMENT FEES TOTAL COST ESTIMAT	,

ŞEPA

United States Environmental Protection Agency Washington, DC 20460

♥EPA	PLU	IGGIN	G AN	D AB	ANDON	MENT PL	AN			
Name and Address of Facility Buckeye Woodhaven Terminal						ddress of Owne erminals, LLC	the section of the se			
Woodhaven, MI Locate Well and Outline Unit on Section Plat - 640 Acres			State Michiga	ın		County Wayne		Permit	Number	
N		Ī	Surface L	ocation D	Description					
			nw 1/4 c	of NE 114	of <u>nw</u> 1/4	of NE 1/4 of	Section 22	Township	04S Range	10E
	-		Locate well in two directions from nearest lines of quarter section and drilling unit Surface Location ft. frm (N/S) Line of quarter section and ft. from (E/W) Line of quarter section.							
w	E		TYPE OF AUTHORIZATION Individual Permit Area Permit Rule Number of Wells TYPE OF AUTHORIZATION WELL ACTIVITY CLASS II CLASS II Brine Disposal Enhanced Recovery Hydrocarbon Storage						al covery	
S			Lease Na	me			Well Numb	BDW-		
CASING AND TU	BING RECORE	DAFTER	PLUGGING	3		METH	OD OF EMPL			LUGS
SIZE WT (LB/FT) TO BE PUT II 20 133 13 3/8 61 9 5/8 40 5 1/2 15.5	N WELL (FT)	50 470 1310 3490	EFT IN W	ELL (FT)	HOLE SIZE			er Method		
CEMENTING TO PLUG AND	ABANDON DA			PLUG #		2 PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Size of Hole or Pipe in which Plug Wi	II Be Placed ((inche:		8 3/4	4.95 (II	D) 4.95 (ID)	4.95 (ID)			
Depth to Bottom of Tubing or Drill Pi	pe (ft.			3730	3250	450	250			
Sacks of Cement To Be Used (each pl	ug)			132	6.2	25	31.1			
Slurry Volume To Be Pumped (cu. ft.)				156	7.4	29.4	36.8			
Calculated Top of Plug (ft.)				3270	3200	250	0			
Measured Top of Plug (if tagged ft.)				3270	3200	250	0			
Slurry Wt. (Lb./Gal.)				15.6	15.6	15.6	15.6			-
Type Cement or Other Material (Class				H	H	H	H			
LIST ALL OPEN I	IOLE AND/OR		ATED INTE	ERVALS A	ND INTERVA		SING WILL BE	VARIED (if a		
From	3490	То				From			То	
3730	3770									
Estimated Cost to Plug Wells	1								*	
\$109,895										
I certify under the penalty of la attachments and that, based or information is true, accurate, a possibility of fine and imprison	n my inquiry on nd complete.	of those in	y examine ndividuals are that th	immedia	familiar with tely respons	ible for obtaini	ng the inform	ation, I beli	eve that the	•
Name and Official Title (Please type Carl A. Ostach, VP Domestic Fiel		3	Sign	Ca	nl G.	Ostre.	4		Date Signed	5/17

The public reporting and record keeping burden for this collection of information is estimated to average 4.5 hours for operators of Class I hazardous wells, 1.5 hours for operators of Class I non-hazardous wells, 3 hours for operators of Class II wells, and 1.5 hours for operators of Class III wells.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to the collection of information; search data sources; complete and review the collection of information; and, transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

\$EPA		PLU		Wa	shington,	ntal Protection DC 20460	•	AN				
Name and Address of Faci	lity				1	lame and Add	ress of Owne	r/Operator				
Buckeye Woodhaven T Woodhaven, MI	erminal					Buckeye Ter	minals, LLC	;				
Locate Well and Out	lies Unit an		State				ounty		Permit	Number		
Section Plat - 640 Acr			Mic	chiga	n	1	Wayne					
	N		100000000000000000000000000000000000000			escription	(1000000)				-	
	1 1 1		nw	1/4 0	1 NE 1/4	of <u>nw</u> 1/4 of	NE 1/4 of	Section 22	Township	04S Range	10E	
- -			Loca	ate we	ell in two	directions from	n nearest lin	es of quarter	section and	drilling unit		
		_	Surf	ace								
			Loca	ation	ft. frr	n (N/S)L	ine of quarte	r section				
	I		and	:	ft, from (E	/W) Line	of quarter se	ction.				
w		— E	F-20			AUTHORIZATIO	ON			ACTIVITY		
	Lili		V	10000000	idual Per	mit		V CLAS	200000			
	1 1			Rule	Permit			CLAS	SS II Irine Dispos	-1		
-+- -+-	-+-H	-+-		Ruje				- Committee	nhanced Re			
<u> </u>		_ _	Nu	ımber	of Wells	1		1	ydrocarbon	1009-13-10-13-10-10-10-10-10-10-10-10-10-10-10-10-10-		
								CLAS				
	S		Leas	se Nan	ne			Well Num	BDW-2	2		
CASI	NG AND TUE	ING RECORD	AFTER PLUG	GING	;		METH	OD OF EMPL	ACEMENT O	F CEMENT P	LUGS	
SIZE WT (LB/FT) 1	O BE PUT IN	WELL (FT)	TO BE LEFT	IN W	ELL (FT)	HOLE SIZE	√ Th	e Balance Me	thod			
20 133			50			Driven		The Dump Bailer Method				
13 3/8 61			470			17 1/2		e Two-Plug N				
9 5/8 40			1310			12 1/4	Ot	her				
5 1/2 15.5			3490			8 3/4					,	
CEMENTING T	O PLUG AND	ABANDON DA	ATA:		PLUG #		PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7	
Size of Hole or Pipe in wh		Chrysler Hay - Alexed	inche:		8 3/4	4.95 (ID)	all finish a harmating and architecture An	4.95 (ID)				
Depth to Bottom of Tubin					3730	3250	450	250	-	-		
Sacks of Cement To Be Us Slurry Volume To Be Pum		19)			152	7.2 8.5	25	31.1	_	-		
Calculated Top of Plug (ft.	The service service means				3270	3200	250	0	-		-	
Measured Top of Plug (if t	×0			-	3270	3200	250	0				
Slurry Wt. (Lb./Gal.)					15.6	15.6	15.6	15.6				
Type Cement or Other Mat	terial (Class I	III)			Н	Н	Н	Н				
LIST	ALL OPEN H	OLE AND/OR	PERFORATED			ND INTERVALS		N-	VARIED (if a	any)		
From			То				From			То		
3730		3490										
Entimeted Contact Discussion	a lla											
S112,645	ells											
				,	Certific	ation						
I certify under the p attachments and th information is true, possiblity of fine a	at, based on accurate, an	my inquiry c id complete.	f those indivi I am aware th	amine duals hat the	d and am immediat	familiar with t	le for obtaini	ng the inform	nation, I beli	eve that the		
Name and Official Title (F	Please type o	r print)		Sign	ature	7	0 6	, /		Date Signed	d	
Carl A. Ostach, VP Do	mestic Field	l Operations				and a	. Out	rch		121	15/17	
						WIND WI	The state of the				20 1 1 1	

The public reporting and record keeping burden for this collection of information is estimated to average 4.5 hours for operators of Class I hazardous wells, 1.5 hours for operators of Class I non-hazardous wells, 3 hours for operators of Class II wells, and 1.5 hours for operators of Class III wells.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to the collection of information; search data sources; complete and review the collection of information; and, transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

Approval Expires 12/31/2018 OMB No. 2040-0042 United States Environmental Protection Agency Washington, DC 20460 **€PA** PLUGGING AND ABANDONMENT PLAN Name and Address of Facility Name and Address of Owner/Operator Buckeye Woodhaven Terminal Buckeye Terminals, LLC Woodhaven, MI Permit Number State County Locate Well and Outline Unit on Michigan Wayne Section Plat - 640 Acres Surface Location Description NE 1/4 of NE 1/4 of SW 1/4 of NE 1/4 of Section 22 Township 04S Range 10E Locate well in two directions from nearest lines of quarter section and drilling unit Surface ft, frm (N/S) ____ Line of quarter section Location ft. from (E/W) ____ Line of quarter section. WELL ACTIVITY TYPE OF AUTHORIZATION V CLASS I ✓ Individual Permit CLASS II Area Permit Brine Disposal Rule Enhanced Recovery Number of Wells 1 Hydrocarbon Storage CLASS III Well Number BDW-3 Lease Name METHOD OF EMPLACEMENT OF CEMENT PLUGS CASING AND TUBING RECORD AFTER PLUGGING SIZE WT (LB/FT) TO BE PUT IN WELL (FT) TO BE LEFT IN WELL (FT) HOLE SIZE ✓ The Balance Method 20 133 50 Driven The Dump Bailer Method 13 3/8 61 470 17 1/2 The Two-Plug Method 9 5/8 40 1310 12 1/4 Other

3 1/2 15.5 3490		8 3/4					
CEMENTING TO PLUG AND ABANDON DATA:	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Size of Hole or Pipe in which Plug Will Be Placed (inche:	8 3/4	4.95 (ID)	4.95 (ID)	4.95 (ID)			
Depth to Bottom of Tubing or Drill Pipe (ft	3730	3250	450	250			
Sacks of Cement To Be Used (each plug)	152	7.2	25	31.1			
Slurry Volume To Be Pumped (cu. ft.)	180	8.5	29.4	36.8			
Calculated Top of Plug (ft.)	3270	3200	250	0			
Measured Top of Plug (if tagged ft.)	3270	3200	250	0			
Slurry Wt. (Lb./Gal.)	15.6	15.6	15.6	15.6			
Type Cement or Other Material (Class III)	H	H	Н	Н			

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any) From 3490 3730 Estimated Cost to Plug Wells

\$112,645

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title (Please type or print)	Signature	Date Signed
Carl A. Ostach, VP Domestic Field Operations	Carl a Optoch	12/15/17

The public reporting and record keeping burden for this collection of information is estimated to average 4.5 hours for operators of Class I hazardous wells, 1.5 hours for operators of Class I non-hazardous wells, 3 hours for operators of Class II wells, and 1.5 hours for operators of Class III wells.

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≎EPA PLUG	United States E Wa GGING AN	ashington, C	OC 20460		AN					
Name and Address of Facility			ame and Addr							
Buckeye Woodhaven Terminal Woodhaven, MI		E	Buckeye Terr	minals, LLC						
10 (10 (10 (10 (10 (10 (10 (10 (10 (10 (State		C	ounty		Permit	Number			
Locate Well and Outline Unit on Section Plat - 640 Acres	Michiga	ın	V	Vayne						
N	Surface L	ocation De	scription							
	NE 1/4	NE 1/4 of NE 1/4 of S 1/4 of NE 1/4 of Section 22 Township 04S Range 10E								
	Surface Location	Location ft, frm (N/S) Line of quarter section								
W			UTHORIZATIO	N.			CTIVITY			
		vidual Perm	nit		CLAS					
	Rule	a Permit				ss II Irine Disposi	al.			
						nhanced Re				
	Number	r of Wells 1	_			lydrocarbon	The contract of the contract o			
					CLAS	SS III				
s	Lease Na	me			Well Numi	per BDW-4	1			
CASING AND TUBING RECORD	AFTER PLUGGING	3		METH			F CEMENT P	LUGS		
SIZE WT (LB/FT) TO BE PUT IN WELL (FT)	TO BE LEFT IN W	ELL (FT)	HOLE SIZE	✓ The	Balance Me	thod				
20 133	50		Driven	☐ The	Dump Baile	Bailer Method				
	470		17 1/2	☐ The	Two-Plug N	lethod				
	1310		12 1/4	Ott	ner					
	3490		8 3/4							
CEMENTING TO PLUG AND ABANDON DAT		PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7		
Size of Hole or Pipe in which Plug Will Be Placed (in Depth to Bottom of Tubing or Drill Pipe (ft	icne:	8 3/4 3730	4.95 (ID) 3250	4.95 (ID) 450	4.95 (ID) 250			-		
Sacks of Cement To Be Used (each plug)		132	6.2	25	31.1					
Slurry Volume To Be Pumped (cu. ft.)		156	7.4	29.4	36.8					
Calculated Top of Plug (ft.)		3270	3200	250	0					
Measured Top of Plug (if tagged ft.)		3270	3200	250	0					
Slurry Wt. (Lb./Gal.)		15.6	15.6	15.6	15.6					
Type Cement or Other Material (Class III)		H	H	Н	Н					
LIST ALL OPEN HOLE AND/OR P		ERVALS AN	DINTERVALS		ING WILL BE	VARIED (if a	• • •			
From 2400	То			From			То			
3730 3490		==-		_						
				-						
Estimated Cost to Plug Wells \$109,895								,		
I certify under the penalty of law that I have pe attachments and that, based on my inquiry of information is true, accurate, and complete. I possibility of fine and imprisonment. (Ref. 40	ersonally examine those individuals am aware that th	s immediate	amiliar with th	e for obtaini	ng the inform	nation, I beli	eve that the	e		
Name and Official Title (Please type or print)		nature/	126	-			Date Signed	i		
Carl A. Ostach, VP Domestic Field Operations	3,3,	16	20 6	Onto	wh			5/17		

The public reporting and record keeping burden for this collection of information is estimated to average 4.5 hours for operators of Class I hazardous wells, 1.5 hours for operators of Class I non-hazardous wells, 3 hours for operators of Class II wells, and 1.5 hours for operators of Class III wells.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to the collection of information; search data sources; complete and review the collection of information; and, transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

⊕EPA			PLU	United State	S Environme Washington	, DC 20460		AN					
Name and Add	ress of Fa	acility				Name and A	ddress of Owne	r/Operator					
Buckeye Woodhaven Terminal Woodhaven, MI						Buckeye T	erminals, LLC						
				State			County		Permit	Number			
	iell and O ilat - 640 A	outline Unit on Acres		Mich	igan		Wayne						
-		N		Surfac	e Location D	Description							
	1 1			NE 1	14 of <u>NE</u> 1/4	of SW 1/4	of <u>NE</u> 1/4 of	Section 22	Township	04S Range	10E		
	-		- 1 - - 1 - - 1 -	Surfac	Locate well in two directions from nearest lines of quarter section and drilling unit Surface Location ft, frm (N/S) Line of quarter section								
W	1 1		E	V 1	ndividual Pe			✓ CLAS	SS I				
					Area Permit			CLAS	SS II				
					Rule				rine Dispos	al			
	1 1			Num	ber of Wells	1		The same of the sa	nhanced Re				
	TT	-Fi-i	- 						lydrocarbon	Storage			
L i	<u>i i</u>	نىنىك	لــنــ					CLAS					
		s		Lease	Name			Well Numi	BDW-S	5			
	CA	SING AND TU	BING RECORD	AFTER PLUGG	ING		METH	IOD OF EMPL	ACEMENT O	F CEMENT P	LUGS		
SIZE WT	(LB/FT)	TO BE PUT II	N WELL (FT)	TO BE LEFT II	WELL (FT)	HOLE SIZ	ZE 7 Th	e Balance Me	thod				
20 133				50		Driven			Bailer Method				
13 3/8 61				470		17 1/2		e Two-Plug N					
9 5/8 40				1310		12 1/4	4 Other						
5 1/2 15.5				3490		8 3/4							
C	EMENTING	TO PLUG AND	ABANDON DA	ATA:	PLUG #			PLUG #4	PLUG #5	PLUG #6	PLUG #7		
	-	which Plug Wi		inche:	8 3/4	4.95 (T		4.95 (ID)					
		used (each pl			3730	7.2	450 25	31.1		-			
ASSESSED AND A SECOND		ımped (cu. ft.)			152	8.5	29.4	36.8		-	-		
Calculated To					3270	3200	250	0					
Measured Top					3270	3200	250	0					
Slurry Wt, (Lb					15.6	15.6	15.6	15.6					
Type Cement	or Other N	Material (Class	III)		H	Н	The state of the s	H					
	LIS	ST ALL OPEN H	IOLE AND/OR	PERFORATED I	-				VARIED (if a	any)			
	From			То			From			То			
3730			3490										
F-11		Malla											
S112,645	st to Plug	vveiis											
					0	- At							
attachn Informa	ents and tion is tru	that, based or ue, accurate, a	n my inquiry on nd complete.	personally exam of those individe I am aware tha IO CFR 144.32)	uals immedia	familiar with	sible for obtain	ng the inform	nation, I beli	eve that the			
Name and Off	icial Title	(Please type	or print)	1:	Signature	1097	3 4	2		Date Signe	d		
Total 10 (0) 1000		Domestic Fiel	44-45 Wes		1 h	06	Date	./_			5/17		

The public reporting and record keeping burden for this collection of information is estimated to average 4.5 hours for operators of Class I hazardous wells, 1.5 hours for operators of Class I non-hazardous wells, 3 hours for operators of Class II wells, and 1.5 hours for operators of Class III wells.

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